## REMARKS

Claims 1-12, 14-38 and 40-54 are pending in the above-identified application. Claims 1-12, 14-38 and 40-54 were rejected. Accordingly, claims 1-12, 14-38 and 40-54 remain at issue.

**I.     35 U.S.C. § 103 Obviousness Rejection of Claims**

Claims 1-54 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Nafeh* (US 5,343,251) in view of *Kanda* (US 5,930,446). Applicant respectfully traverses this rejection.

With respect to independent claim 1 and with reference to the exemplary embodiment depicted in Figure 1A, Applicants claim a signal processing device having the following limitations:

> *a first signal section detecting means (202) for detecting a first signal section (202a) from an input signal (200a) including at least the first signal section and the remaining signal section on a time division basis;*
> *a first signal extracting means (201) for extracting a first signal (201a)  in the first signal section from the input signal in accordance with a result of the detection by the first signal section;*
> *a recording means (205) for recording each signal extracted from the input signal by the first signal extracting means (201);*
> *an index information extracting means (206) for extracting information from said first signal section to be used as a user-selectable index(206a) representing said recorded first signal; and*
> *a display means (208) for displaying said index.*

Independent claim 27 has similar limitations to claim 1.

Applicant teaches that the claim 1 signal processing device allows first signals (e.g., commercial messages) to be detected in and extracted from an input signal so that the first signals may be separated from the remaining signals (e.g., program segments) in the input signal

based on respective characteristic values characterizing each first signal. *See* Application, at pgs. 3-4. Applicant further teaches that the recording means stores each first signal in association with its respective characteristic values and the an index information extracting means is adapted to extract information from each recorded first signal (and, in one implementation from the its respective characteristic values) to generate a user-selectable index (such as a the starting image, the cut point image, the cut point video image, the starting sound and/or the ending sound of the respective recorded first signal or commercial message). *See* Application, at pgs. 3-4 & pg. 18 line 19 - pg. 20 line 14. Applicants also teach that the claim 1 signal processing device allows a user to selectively access a recorded first signal or commercial message based on the displayed index corresponding to the recorded first signal. *See* Application, at pgs. 3-4 & pg. 20 line 15 - pg. 26 line 9.

The Examiner acknowledges that *Nafeh* fails to disclose "*an index information extracting means for extracting information from said first signal section to be used as a user-selectable index representing said recorded first signal and display means for displaying said index*" as taught and claimed by the Applicants. However, the Examiner asserts that *Kanda* teaches this missing limitation. Applicants respectfully disagree.

*Kanda* discloses a graphic user interface (GUI) for allowing an operator to edit a video signal V3 that has been stored or recorded to a hard disk array 2. *Kanda*, Col. 6:22 - 9:28. Using mark IN buttons (24c and 27c) and mark OUT buttons (24f and 27f) on the GUI, an operator may define clips from the video signal that can be "rearranged freely." *Kanda*, Col. 7:66 - 8:49, Col. 8:59 - 9:28, Col. 11:1-11. The clips are each numbered by the GUI in the order in which

they were marked by the operator for reference by the operator. *Kanda*, Col. 10:20-24. Thus, assuming *arguendo* that a clip of a recorded video signal may correspond to a "detected first signal section" of an "input signal," *Kanda* fails to teach or suggest "an index information extracting means" or structure for performing the function of "extracting information from the first signal section to be used as a user-selectable index representing the recorded first signal" as required by claim 1.

Accordingly, Applicants submit that neither *Nafeh* nor *Kanda*, either alone or in combination with any other cited reference, teach all the limitations of independent claims 1 and 27 and respectfully requests that the rejection to these claims be withdrawn.

Claims 2-12, 14-26, and 53 depend directly or indirectly from claim 1 and should be deemed allowable for at least the same reasons as claim 1. Claims 28-38, 40-52, and 54 depend from claim 27 and should be deemed allowable for at least the same reasons as claim 27. Accordingly, Applicants respectfully request that the rejection to the dependent claims 2-12, 14-26, 28-38, and 40-54 be withdrawn.

In addition, with regard to claims 2 and 28, Applicants claim a "signal processing device" that has the following additional limitation: "a characteristic value extracting means for extracting a characteristic value characterizing the first signal from the detected first signal section, wherein said recording means <u>records each characteristic value of the first signal in association with the first signal</u>." Applicants further teach that the first signal and each of the characteristic values of the first signal are provided to the "index information extracting means" (e.g., the CM Index generating section 206) for generation of a respective a user-selectable index

representing the extracted and recorded first signal so that the user may selectively view and/or hear the first signal (e.g., commercial message) represented by the user-selectable index. *See* Application, at pg. 19 line 4 - pg. 22 line 14.

*Nafeh* discloses an apparatus 10 for discerning a commercial message from a program message in an input signal 12 based on learned signal patterns associated with different classes of commercial and program messages so that the commercial messages can be eliminated (or attenuated) <u>before being recorded</u> on a VCR or displayed on a TV. *See Nafeh*, Col. 2:38 - Col. 3:57; Col. 5:29 - Col. 6:21; Col. 7:14-46. In particular, *Nafeh* discloses that "[t]he single output of the network [classifier 24 of apparatus 10] is used to make a decision as to whether the broadcast [or input signal 12] is either a commercial or a program, following a detected transition [in the broadcast or input signal 12]. Thus, *Nafeh* to disclose storing or recording the extracted first signal (e.g., the commercial message) of the input signal in association with each characteristic value of the first signal as required by claims 2 and 28. Accordingly, Applicants submit that claim 2 and 28 should each be deemed allowable for the each of the reasons given above.

Furthermore, with regard to claims 18 and 43, Applicants claim a signal processing device and a method that each has the following limitation: "*a comparing means for comparing the characteristic values respectively characterizing two first signals recorded by said recording means and <u>discarding one of the recorded two first signals when the characteristic values of the two first signals are determined to be substantially the same</u>*." Applicants further teach and claim (in claims 21 and 46) that "the *comparing operation*" is performed "*on a basis of a*

*distance as determined by using a predetermined distance scale between vectors corresponding*

*to the two first signals* [*such as derived using the "minimum length prioritizing rule"*]*, the*

*respective vector of each of the two first signals formed from at least one of the amplitude of the*

*signal in the first signal section, the spectrum of the signal in the first signal section, the linear*

*prediction coefficient of the signal in the first signal section, the histogram of a predetermined*

*component of the signal in the first signal section, the mean value of the predetermined*

*component of the signal in the first signal section, a difference between two predetermined signal*

*components of the signal in the first signal section, the number of changes in the state of the*

*signal in the first signal section and the time of a change in the state of the signal in the first*

*signal section."* *See* Application, at pg. 67 line 9 - pg. 70 line 12; Figs 24-25. Applicants teach

that the "[w]ith the minimum length prioritizing rule, the time section comprising a shorter CM

candidate [or shorter first signal distance] is selected over one or more other CM candidates

having a longer time section distances. *See* Application, at pg. 68 line 4-11; Figs 24-25.

      *Nafeh* discloses that "[t]he single output of the network [classifier 24 of apparatus 10]

used to make a decision as to whether the broadcast [or input signal 12] is either a commercial or

a program" is derived from the "last (n+1) feature vectors" extracted from each "frequency band

of interest" of an input audio and video signal, where "n" is the number of samples of the input

signal. In particular, *Nafeh* discloses that the feature vectors are used to drive a "layered

arrangement of artificial neurons in which each neuron of a given layer feeds all neurons of the

next layer" and "all weighted inputs to the neurons [e.g., the feature vectors] are added" to derive

the "single output" of the network classifier. Thus, *Nafeh* fails to disclose the limitation of

claim 18 and 43 of *"characterizing two first signals recorded by said recording means and*

*discarding one of the recorded two first signals when the characteristic values of the two first*

*signals are determined to be substantially the same."* Moreover, *Nafeh* fails to disclose the

limitation of claims 21 and 46 of performing a comparing operation between two first signals of

an input signal based on *"a distance as determined by using a predetermined distance scale*

*between vectors corresponding to the two first signals."* Accordingly, Applicants submit that

claim 18, 21, 43 and 46 should each be deemed allowable for the each of the reasons given

above.

**II.** **Conclusion**

In view of the above amendments and remarks, Applicant submits that all pending claims

are clearly allowable over the cited prior art, and respectfully requests early and favorable

notification to that effect.

Respectfully submitted,


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